ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's	)	RM - 8614
Rules for Unbundling of	)	
Local Exchange Carrier	)	
Line Facilities	)	

COX ENTERPRISES, INC. COMMENTS

Cox Enterprises, Inc. ("Cox"), by its attorneys, hereby files comments on the petition for rulemaking filed by MFS Communications Company, Inc. ("MFS") requesting the establishment of a rulemaking to examine an aspect of competition policy -- the unbundling of Tier 1 local exchange company ("LEC") local loops. In Cox's view, Commission action in this and other areas can promote competition in telecommunications services and advance the public interest.

I. Introduction

Cox's interest in local telecommunications competition is a matter of public record. Cox has devoted significant resources to the development of new communications services. For example, a Cox cable subsidiary in Omaha, Nebraska was the first to use cable television plant for the origination, distribution and termination of interstate, interexchange telecommunications.[1] More recently, Cox led the cable industry in the development of cable-based Personal Communications Services ("PCS"), for which Cox was recognized by the award of a pioneer preference resulting in the issuance of a commercial PCS license for

[1] Commline, 102 FCC 2d 110 (1985) vacated as moot, 1 FCC Rcd 561 (1986).

the Los Angeles-San Diego Major Trading Area. Cox was the first cable company to acquire an interest in Teleport Communications Group, Inc., a leading competitive access provider and Cox also operates its own CAP subsidiary, Cox Fibernet.[2]

Accordingly, Cox is no stranger to the challenges facing those companies seeking to provide service offerings that compete with those available from the incumbent LEC. Cox consistently has advocated the adoption of federal and state policies that promote the feasibility of such local competition.

MFS' petition seeks the establishment of Commission policies to require the unbundling of the bottleneck LEC local loop. Cox agrees that this would be a useful inquiry. In isolation, however, it would fail to address what in Cox's view are two even more critical areas for Commission action --- the establishment of a federal policy on compensation for reciprocal interconnection and the adoption of concrete requirements for true number portability.

II. Establishing Appropriate Intercarrier Interconnection Policies Is The Single Most Important Enabler to the Development of Local Competition.

The Commission has previously recognized in the context of facilities-based commercial mobile radio service ("CMRS") that it has a critical role in determining what constitutes reasonable interconnection.[3] The Commission has preempted aspects of CMRS

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[2]Cox made the initial 12.5% cable ownership investment in Teleport in 1991, later raising its interest to a controlling interest as Cox brought TCI into the business. In 1993 Comcast and Continental Cablevision also acquired interests in Teleport.

[3]See Second Report and Order, Regulatory Treatment of Mobile Services, 9 FCC Rcd 1411, 1493 (1994). See also, Omnibus Budget Reconciliation Act of 1993, P.Law 103-66,

interconnection and articulated a requirement of mutuality of compensation for the termination of traffic that appropriately acknowledges the reciprocal and beneficial nature of the switching and call termination functions that CMRS and landline carriers provide to one another.

The Commission now has underway a proceeding that may flesh out the mutual compensation arrangements required between the CMRS provider and a LEC.[4] There is every urgent reason, however, for the Commission to move forward in a parallel proceeding to investigate and establish appropriate intercarrier compensation arrangements among landline networks. Indeed, the Chairman of the Commission has spoken strongly in favor of Commission action to establish reasonable, low cost interconnection to promote competition.[5]

Cost-based compensation has been the Commission's preferred method for interconnection compensation. In the case of incumbent LECs, this approach has lead to the establishment of strategic fully loaded, fully allocated charges assessed against potential competitors.[6] No mutuality of compensation has been required in landline interconnection, as regulators have focused solely on the issue of the "cost-based" LEC pricing of

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§ 332(c)(1)(B), 107 Stat. 312, 393, August 10, 1993.

[4]See Notice of Proposed Rulemaking and Notice of Inquiry, Equal Access and Interconnection Obligations Pertaining to Commercial Mobile Radio Services, 9 FCC Rcd 5708 (1994).

[5]See Remarks of Chairman Reed E. Hundt, Wertheim-Schroder/Variety Conference, April 4, 1995.

[6]See Ameritech Operating Companies et al., CC Docket No. 94-97 (DA 94-1421) at ¶ 22, (adopted December 9, 1994, released December 9, 1994).

interconnection to its essential facilities. As a "network of networks" becomes the sole evolutionary pathway to competition, however, the current framework starkly limits the viability of new entrants.

The Commission should do what it can to break the cycle of LEC initiated one-way interconnection rates that perpetuate the LEC's monopoly advantage. Rather than embroil competitors and regulators in endless and unsatisfactory debates regarding costs, there are structural approaches that dispense equitably with the need to determine cost.[7] Cox believes that a "sender keep all" mutual compensation arrangement in which each connector agrees to terminate traffic for the other without demanding payment for terminating service holds the greatest promise for ending the incumbent LEC's domination of the market, which is caused in large part by its ability to set strategic and uneconomic interconnection rates.

A "sender keep all" interconnection regime is economically efficient if the actual costs of interconnection are very low so that there is little difference between a cost-based and a zero rate. Cox has had Dr. Gerald Brock, a distinguished economist and former Chief of the Common Carrier Bureau, review LEC cost studies to determine a reasonable estimate for LEC costs of terminating traffic. Based on LEC data, Dr. Brock has estimated that a reasonable average of the incremental cost is 0.2 cents per minute.[8] Because cost is

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[7]The Internet is the best current example of a competitive interconnection model. Commercial Internet service providers have agreed that the exchange of traffic is of mutual benefit and therefore these providers exchange traffic on a "sender keep all" basis without settlement or interconnection payments. The difficulty with the current landline model, however, is that the monopoly LEC has an inherent anticompetitive incentive to reject compensation models with mutuality components.

[8]Dr. Brock's study is attached as Exhibit A to this filing.

determined by the need for peak period capacity, the cost at peak is higher than average and the cost is zero during non-peak periods. Because of the de minimis LEC cost of termination, Cox believes a "sender keep all" interconnection structure with zero based rates would be equitable as well as economically efficient.

Unfortunately, LECs do not charge their competitors anything close to a 0.2 cent rate. Typical cellular interconnection rates, for example, are substantially over ten times that amount. Expanded Interconnection charges are based on the LEC's fully distributed costs as well as a "make whole" residual interconnection charge. These interconnection structures need to be torn down and rebuilt on a competitive carrier model. *For example, in Cox's view it is unsustainably discriminatory and terrible public policy for the Commission to permit LECs to price interconnection at fully distributed costs while only allocating incremental costs to new LEC investments such as integrated telephone and video networks.* Accordingly, any consideration of the MFS petition should also include as a main element the investigation and establishment of a "sender keep all" mutual compensation regime for intercarrier traffic. At a minimum, this federal policy for intercarrier compensation could serve as a guideline to state commissions if the Commission were unwilling to preempt state commission interconnection policies that stifle the development of local competition.

III. Implementation of True Number Portability Also Is Crucial to the Development of Local Competition.

Like competition in any other area, local telephone competition will depend greatly on the substitutability of the competitors' products. Consequently, one of the key elements in telecommunications competition is numbering and dialing parity. The explosive growth of

interexchange competition, along with the enormous consumer benefits that followed, was fueled in large part by regulatory decisions requiring dialing parity via equal access. In local telephone competition, the equivalent requirement is true local number portability. Without true local number portability, it will be significantly harder for telephone competitors to obtain new customers. Indeed, the strategies of incumbent LEC monopolies suggest that they recognize and try to maximize their numbering advantages in the current environment.

"True" local number portability is seamless integration of all of the functions necessary to permit a user to retain his telephone number when he switches from one carrier to another. True portability would not use call forwarding techniques or any other "interim" mechanism that requires assignment of extra telephone numbers and charges to connecting carriers to route calls from one carrier to another. True portability would use concepts similar to those applied to 800 number portability, but on a local level, to route calls at the local level. Unlike 800 number portability, which depends on a single centralized database, this form of local number portability would use local, distributed databases to route calls. Because these databases would be needed only at the point where a call is going to be routed in the local network, there would be no reason to delay portability to develop a centralized, nationally accessible database. For the same reason, true local number portability could be implemented on a piecemeal basis, rather than all at once on a nationwide basis.

Portability is important to the growth of competition for several reasons. First, if existing customers are forced to change their telephone numbers when they change telephone companies, it will be much more difficult for new telephone competitors to get new customers. Just as the inconvenience of dialing an extra 10 or 17 digits limited the market

share of interexchange competitors before equal access, the inconvenience of changing telephone numbers would make consumers more reluctant to change telephone companies. Because the market for telephone service consists almost entirely of existing telephone customers, requiring a new number whenever a customer changes telephone companies would significantly damage the prospects of new entrants.[9]

Second, it is apparent that incumbent LECs are aware of the advantages that numbering can provide to them. This is one reason for the proliferation of LEC proposals for area code overlays rather than traditional area code splits when numbers run out in existing area codes. Without number portability, an overlay compounds the incumbent's advantages by requiring customers of new entrants to change not only their telephone numbers, but also their area codes. This is a particularly significant advantage for incumbents because it is likely that overlay codes will be perceived as different from existing area codes, and certainly inferior to the original area code, for years after they are implemented.[10]

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[9]Requiring new telephone numbers did not pose a problem for cellular carriers, but only because cellular service generally is perceived as supplementary to existing telephone service. When a carrier is trying to substitute for an existing service, requiring customers to obtain new telephone numbers will be a much more significant barrier.

[10]In an overlay, NXX codes from the original area code are assigned until they run out, and later requests for NXX codes are filled from the new area code. As a result, incumbents have a large supply of numbers codes from the original area code and new entrants are required to serve their customers with numbers from the new area code. This situation could persist for years. For example, when Pacific Bell described its overlay plan for the 310 area code to consumers, it stated that it did not expect to give **any** of its customers numbers in the overlay area code until "before the turn of the century" and that it expected to continue to give all residential customers numbers from the 310 area code until the year 2001, five years after the overlay was scheduled to go into effect. *See* Exhibit B (excerpts from transcript of Pacific Bell

During the last two years overlays have become the area code relief method of choice for Bell Operating Companies, regardless of the suitability of an area for overlays. While the original view of the North American Numbering Plan Administration, as expressed in its documents on the future of the numbering plan, was that overlays were best suited for densely populated, geographically compact areas, BOCs increasingly are supporting overlays for large areas with dispersed populations. Most recently, Southwestern Bell has proposed an overlay for the 314 area code, which covers approximately 35 percent of the State of Missouri. Similarly, in industry meetings Pacific Bell has supported an overlay for relief of the 619 area code in southern California, which covers a land area larger than Pennsylvania, and which stretches more than 500 miles from north to south and 300 miles from east to west. The only rational explanation for these proposals, which would require untested changes to telephone switching equipment and significant changes in consumer dialing patterns, is that the incumbent LECs have discovered that overlays will give them a significant competitive advantage. With true number portability, the competitive advantages of overlays for incumbent local exchange carriers are eliminated and it is likely that many of the overlays now being proposed would not occur.

Moreover, the various proposals for "interim" number portability do not meet the needs of potential LEC competitors. "Interim" solutions typically involve call forwarding or other similar mechanisms. These approaches waste valuable telephone numbers, an increasingly scarce resource in the densely populated areas where competition is most likely

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310 relief public meeting).

to emerge.[11] Equally important, most interim number portability proposals provide inferior service because they limit the features that can be made available with a call-forwarded line. As a result, the customers of a competitor would be guaranteed worse service than the customers of the incumbent, because of limitations in the **incumbent's** telephone network. In addition, interim number portability proposals tend to be costly to new entrants, and certainly more expensive than more permanent number portability arrangements should be. Thus, only the implementation of true number portability will eliminate the incumbents' competitive advantage arising from current numbering arrangements.

Consequently, the Commission should require incumbent local exchange carriers and their competitors to implement number portability by a date certain, and the implementation date should be no later than three years after it adopts a portability requirement. As the experience of 800 number portability has shown, setting a date certain is the only way to assure that true number portability will be implemented in a timely fashion. While number portability will not come without cost, these costs must be borne by all carriers, and not merely by the new entrants. The Commission also should require faster implementation of number portability in any area where competition is now authorized because the availability of portability is much more important in those locations.[12] Without a strict Commission

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[11]Call forwarding solutions typically require two telephone numbers to accomplish the work normally done by a single number.

[12]The Commission could permit interim number portability solutions for a limited time in areas where competition is now permitted, but should not delay the general deadline for availability of true number portability. Any interim solutions should be offered at substantial discounts, just as non-premium access is offered at discount prices prior to the implementation of equal access.

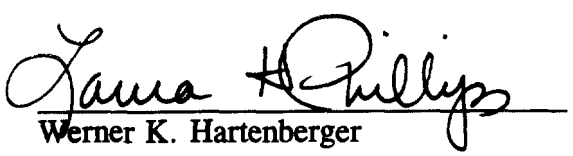
requirement, it is likely that the implementation of portability will be greatly delayed, as such delays are in the interest of incumbent telephone companies. Only a deadline will provide sufficient impetus for swift implementation of true number portability.

IV. Conclusion

The Commission could have an enormously beneficial impact in encouraging the development of local competition by the adoption of fair, forward looking interconnection policies. If it takes the next step and considers the local loop unbundling proposals in the MFS Petition, it should expand its rulemaking to include consideration of interconnection mutual compensation and true number portability policies.

Respectfully submitted,

COX ENTERPRISES, INC.



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April 10, 1995

EXHIBIT A

INCREMENTAL COST OF LOCAL USAGE

Gerald W. Brock
March 16, 1995
Prepared for Cox Enterprises

Summary

A reasonable estimate of the average incremental cost of local usage (and therefore the cost of terminating traffic received from a competitor) using digital technology is 0.2 cents per minute. That estimate is based on studies done by or supported by telephone companies. The cost is determined by peak period capacity and therefore the true cost is considerably higher than the 0.2 cents per minute average during the peak period and is zero during the non-peak period.

I. Introduction

In a separate paper prepared for Comcast, I have argued that the theoretically correct interconnection charge is cost based mutual compensation. However, cost can have many different meanings and in a regulatory context, cost based requirements can lead to interminable regulatory proceedings and disputes. Policy makers have consequently frequently sought structural methods of solving problems that do not require detailed oversight of cost rules.

One proposed structural rule is mutual compensation without oversight of actual rates, but as shown in the Comcast paper that approach is inadequate to limit the exercise of monopoly power. An alternative approach that dispenses with direct control of cost is the policy of "sender keep all" or "bill and keep" in which each party agrees to terminate traffic for the other without payment for terminating service. That is equivalent to mutual compensation with a zero price for compensation. It will be economically efficient if either of two conditions are met: (1) Traffic is approximately balanced in each direction; (2) The actual costs are very low so that there is little difference between a cost based rate and a zero rate.

Existing publicly available studies suggest that the incremental cost of local usage (and therefore the cost of terminating traffic from a competitor) is on average approximately 0.2 cents/minute. The actual cost is considerably higher during the peak period and zero during the off peak period. Thus it would not be efficient or desirable to charge at 0.2 cents/minute on a usage basis. However, the very low average number compared to the price currently charged by local exchange companies suggests that far greater distortions are likely from mutual compensation without control of rates than from sender keep all approaches.

There are two basic methods for estimating cost:

(1) engineering studies of the forward looking cost to supply a particular service;

(2) econometric (statistical) studies of the relationship between observed cost and observed outputs.

Both engineering and econometric studies provide useful information on cost. The engineering study allows one to focus on best practice technology and compute the incremental cost of adding capacity to provide a particular function. Econometric studies provide a reality check by using observed output and cost data rather than projections of expected cost. However, econometric studies may produce less precise estimates of the incremental cost of a particular service than engineering studies because they are measuring the correlation between variations in the total cost of different telephone companies and variations in the quantities of particular services provided by those companies. The cost data include costs for different embedded technologies used by the companies and are not precise enough to provide detailed estimates of the incremental costs of particular services with particular types of technology.

II. Engineering Estimate

The most comprehensive public engineering study of incremental cost was done by the Incremental Cost Task Force with members from GTE, Pacific Bell, the California Public

Utilities Commission, and the RAND Corporation.[1] The Task Force had access to data for telephone companies in California and performed a detailed engineering cost study for various output measures of local telephone service. Individual components were priced based on 1988 prices and costs were computed for switch investment, switch maintenance, interoffice transport, and call attempt costs. All costs were computed for calls during the busiest hour of the year because the investment and associated expenses are related entirely to capacity cost. The Task Force computed the following usage costs for each hundred call seconds (CCS) during the busiest hour of the year for "average" and "larger urban" exchanges:

switch investment	$ 5.00 - $ 10.00	per year
switch maintenance	.20 - .50	per year
interoffice calling	.50 - .60	per year
Total	$ 6.00 - $ 11.00	per year

In addition, the task force computed a cost of $ .30 to $.90 per year for each call attempt during the busiest hour of the year and estimated approximately 1.25 busy hour attempts per busy hour CCS.[2]

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1 Bridger M. Mitchell, Incremental Costs of Telephone Access and Local Use, (Santa Monica, CA: The Rand Corporation, 1990); reprinted in William Pollard, ed., Marginal Cost Techniques for Telephone Services: Symposium Proceedings (Columbus, Ohio: National Regulatory Research Institute, 1991) (NRRI 91-6).

2 Ibid., p. 249, 250.

There are 8766 hours per year and the ratio of the peak usage rate to the average usage rate is approximately 3.[3] That implies that one busy hour CCS is approximately equal to 2922 CCS per year (8766/3). Because one CCS is equal to 1.67 minutes, costs per busy hour CCS can be converted into average costs per minute by dividing by 4880 (2922 total year CCS times 1.67 minutes/CCS). Thus the $6.00 - $11.00 cost per year per CCS during the busiest hour of the year translates into $.0012 - $.0023 per minute. The busy hour attempt cost adds $.375 - $ 1.125 per busy hour CCS (1.25 busy hour attempts per buy hour CCS and $.30 to $.90 annual cost per busy hour attempt), raising the total cost, including busy hour attempts, to $6.375 - $12.125, and the per minute cost to $.0013 - $.0025. Taking the middle of the estimated range gives a cost of $.0019 per minute, or approximately 0.2 cents/minute.

Because the cost is determined by the the peak capacity, the actual cost per minute is much higher at the peak and is zero at the off-peak. If, for example, one assumes that an equal size peak occurs for one hour in each business day (260 hours per year of peak usage and 8506 hours of non-peak usage), then the average cost per minute would be 2.1 cents for the 8.9 percent of the traffic that occurs during the 260 peak hours each year and the average

3 Rolla E. Park, Incremental Costs and Efficient Prices with Lumpy Capacity: The Two Product Case, (Santa Monica, CA: The Rand Corporation, 1994), p. 5.

cost per minute would be zero for the 91.1 percent of the traffic that occurs during the 8506 non-peak hours.

A variety of other engineering studies have been done for specific regulatory purposes and submitted to various state regulatory commissions. For example, New England Telephone prepared an engineering study for the Massachusetts PUC that found an incremental cost of 0.2 cents per minute for local usage served by electronic switches, the same as the Incremental Cost Task Force conclusion using California data.[4]

III. Econometric Estimate

Many econometric cost studies of telecommunication have been done, but the procedures used in most of them do not allow an estimate of the incremental cost of local service. One good econometric cost study that does provide an estimate of the marginal cost of local exchange service is the one performed in 1989 by Louis Perl and Jonathan Falk of NERA, using data from 39 companies (24 Bell and 15 non-Bell) over the years 1984-1987. They developed a statistical relationship between the total cost of the individual companies and the access lines, local usage, and toll usage provided by the companies.

Four different models were used for the statistical estimation. In two of the models, the data for each company

4 Reported in Lewis J. Perl and Jonathan Falk, "The Use of Econometric Analysis in Estimating Marginal Cost," in Pollard, Marginal Cost Techniques, op. cit.

was averaged over the four year period to eliminate the effects of minor year to year fluctuations and to provide a pure cross section estimate. In the other two models, observations were used for each company in each of the four years creating a mixture of time series and cross section observations. In two of the models, calls were used as the unit of usage measurement and in the other two calls minutes were used as the unit of usage measurement.

The estimated marginal costs for local minutes ranged from 0.2 cents per minute to 1.3 cents per minute. The costs per call developed in the models using number of calls as the usage unit were divided by the average holding time to produce estimates of cost per minute comparable to the those from the models using number of minutes as the usage unit. The lowest estimate came from the model with only cross section observations averaged over the four years. The highest estimate came from the model using all observations in a pooled cross section and time series and using calls as the unit of usage measurement. All four models had good statistical properties. Although there are various advantages and disadvantages of each of the four models, none of the four can be identified as either the clearly correct approach or an approach to be discarded.

The statistical form used by Perl and Falk generates marginal cost numbers approximately equal to average cost numbers. Thus it should be expected that their estimates will be somewhat higher than the engineering estimates of

marginal or incremental cost. Furthermore, the engineering estimates generated by the Incremental Cost Task Force were developed based on digital switching technology while the Perl and Falk estimate for local minutes served by electronic switches was based on the embedded technology in 1984-87 which was primarily analog. It is likely that the incremental costs of usage capacity for analog switching are higher than the incremental costs of usage capacity for digital switching.

IV. Conclusion

A reasonable estimate of the average incremental cost of terminating traffic using digital switches is 0.2 cents per minute. That estimate is supported by the engineering studies done with data for California and for Massachusetts and by one of the econometric models developed by Perl and Falk. Other reasonable econometric models using embedded cost data produce somewhat higher cost estimates. The cost is determined by peak period capacity and therefore the true cost is considerably higher than 0.2 cents/minute average during the peak period and is zero during the non-peak period.

EXHIBIT B

AREA CODE 562

PUBLIC HEARING

ALMANSOR COURT

700 SOUTH ALMANSOR STREET

SALON NO. 1

ALHAMBRA, CALIFORNIA

TUESDAY, JUNE 14, 1994

7:00 P.M.

FILE NO. KG42274

REPORTED BY TAMARA M. VOGL

C.S.R. NO. 10186

310-556-1136

KERNS & GRADILLAS

CERTIFIED COURT REPORTERS

9320 WILSHIRE BLVD., SUITE 100, BEVERLY HILLS, CALIFORNIA 90212-3221

Under our plan, overlay area code 562 will serve both traditional telephone services as well as wireless services. In phase 1 of the new area code's introduction, area code 562 will be assigned to all new cellular and paging customers who start their service in this general geography in March of 1996. The general geography of the overlay area includes 213, 818, and 310.

In addition, we have asked cellular and paging companies to adopt some methods over the next two years that would help to reduce some of the demand for telephone numbers in area code 310.

As you know or may not know, area code 310 is the fastest growing area code in the state of California. These methods are described in the fact sheet you received when you arrived this evening, and if anyone did not receive a fact sheet, Gary will provide those for you, or they're on the table by the door as you came in.

Before the turn of the century, we anticipate assigning area code 562 to new land line customers as well. These customers might include some new pay phone customers, data communications customers, and large businesses.

In the year 2001, we also anticipate assigning 562 to new residential customers as well.

Now, before we take your questions and comments, I would like to reassure you that the new area code will not affect the cost of your calls. Area codes were created to help people dial directly. Prices are set by a call's distance and duration and not the area code.

Now, I would like to open the meeting up to questions about the area code proposal. If you have additional questions about telephone service or any other issue, we would be more than happy to talk with you about that before we leave this evening.

I would like to now take any comments or any questions that you might have.

There are no questions? Any comments anyone would like to make for the public record?

MS. SAGER: Yes, I have a comment. For the record, my name is Barbara Sager, and I'm representing Airtouch Cellular, and I'm making this statement on behalf of Airtouch Cellular's Los Angeles market. We're not convinced that the plan Pacific Bell has proposed thus far is the overall best plan for everyone impacted by the

CERTIFICATE OF SERVICE

I, Cynthia S. Shaw, hereby certify that today on this 10th day of April, 1994, I caused a copy of COX ENTERPRISES, INC. COMMENTS to be served by first-class mail, postage prepaid, to the following attorneys for MFS Communications Company, Inc.:

Andrew D. Lipman, Esq.
Russell M. Blau, Esq.
Mary C. Albert, Esq.
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3000 K Street, N.W.
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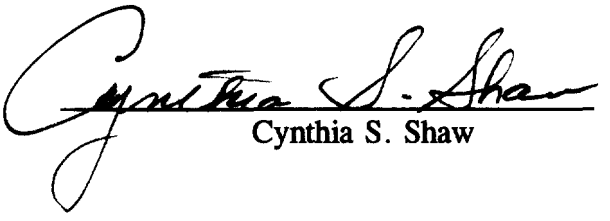

Cynthia S. Shaw